Statement and Testimony of Dr. E.L. Wynder, House of Representatives Hearings, 1957.

It seems perfectly feasible to me, and compatible with safe smoking, to choose tobaccos in such a way as to give you a relatively low yield of tar in line with the dose response studies I have just shown.

From that point of view, studies on tobacco types and the tar yield are of great importance. What about filtered cigarettes, which apparently is one of the crucial matters that we want to discuss here? We become very interested in filtered cigarettes because we felt, on the basis of dose response study, that here was a possible answer to the entire problem. You know the filter story.

One of the first ones to come out with a very effective filter was a manufacturer with a cigarette in which the filter was so good that all you could get through it was hot air. And though this was a perfectly fine cigarette from our point of view, it was a very poor cigarette from the point of view of selling it. And for that reason, I am sure, they tended to loosen the filter more and more.

We recently did a survey in which we asked over 500 patients who had switched to filters why they had switched. We found that more than 70 percent of them had switched because they thought they were getting health protection, or because of advertising which indicated they got health protection.

What happened? As soon as the concept of the effectivensss of filtration became a part of the person's attitude toward filtered cigarettes, some manufacturers loosened their filters, increased the tar contents of their tobacco to a point where some of the smokers of filtered cigarettes today get more tar and more nicotine than they did before when they smoked unfiltered, regular-size cigarettes.

This was well demonstrated, I thought, in a recent study published by Reader's Digest, representing data by Foster Snell, which entirely agree with our own information on this particular subject.

What about filtered cigarettes? The next slide shows in a study which we conducted on filtered cigarettes that the carcinogenic activity, or tar coming through a filtered cigarette, on a gram-for-gram basis, is just as carcinogenic as that of an unfiltered cigarette, demonstrating that the filter is unable to selectively remove components from the tobacco smoke.

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form of cigarettes. In the opinion of the council, the most reasonable interpretation of this evidence is that the relationship is one of direct cause and effect.

5. The identification of several carcinogenic substances in tobacco smoke provides a rational basis for such a casual relationship.

If I were asked what are the three most important reasons why I think that smoking is a cause of lung cancer, I would say they are, first the enormity of the statistical relationship. As you know, your life insurance data, if you belong to a group which has a 25 percent higher risk than the normal, you pay a higher premium. If it is 100 percent greater than normal, you are going to have a hard time finding someone to insure you.

But here data both from England and the United States have shown an increase in up to 7,000 percent greater.

Second, the relation of the response to the amount smoked in the risk of lung cancer, and third, this is entirely in line with presumptive evidence.

The practical aspects are as follows: (1) Moderation in smoking habits; (2) effective filtration, (3) the removal of precursors which we indicated to you; and (4) modification of pyrolysis.

The specific recommendations we would like to make are as follows: (1) In view of the dose response data established both for men and the laboratory animals, specific tar levels in the smoke of a given cigarette should be prescribed. These tar levels should be at least 40 percent lower than that of the average unfiltered regular-size cigarette. Standard procedure should be prescribed for determining the tar and nicotine values.

(2) The amount of tar yield can be controlled with present knowledge of mechanical filtration and tar yield of different type of tobaccos. The sooner this can be achieved, an achievement which should be entirely compatible with smoking pleasure, the sooner we will lower the health hazard of our smoking population.

(3) Work has to be extended in the field of pyrolysis to determine ways and means of lowering the combustion temperature of smoking products and to determine whether materials can be safely added to tobacco which may interfere with the chemical reaction transforming organic substances into higher aromatic polycyclics. The field of anti-catalysts offers some promise in this direction.

(4) Precursors in raw tobacco which, upon pyrolysis, transform into higher aromatic polycyclics have to be studied further with the hope that by their reduction or removal fewer of the higher aromatic polycyclics will be formed.

(5) In addition to the available dose response studies in respect to cancer reduction, further work has to be done on the tolerance level of nicotine.

(6) The practical aspects outlined above may not individually lead to a tobacco tar that will have less carcinogenic activity, but a combination of these factors will certainly lead to a safer smoking product.

In summary, we believe that because of the presumptive evidence, epidemiological evidence, pathological evidence, and animal evidence and chemical evidence, that smoking represents one of the major causes of lung cancer, and that in its absence, 80 percent of all lung cancer and cancer of the oral cavity occurring in this country could be avoided. This opinion is shared by many responsible agencies in this country and in Europe.

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On the other hand, there are some other filter makers who have put on a better filter, used a better blend, to give less tars. This is the direction in which I believe the filter industry should go.

I believe that the filter on the cigarette has a potentially great value, provided it is doing the job that it is supposed to do. I believe that a satisfactory smoking product can be produced by a good filter and by a proper blending of tobacco which will lower the tar content.

I would like to see regulations which would encourage or perhaps even require the filter cigarette manufacturers to reduce their tar and nicotine content to certain prescribed levels, or not permit them to use the term "filter."

Mr. PLAPINGER. What is the level you recommend, Doctor?

Dr. WYNDER. The level that we have recommended is a 40-percent reduction.

Mr. PLAPINGER. Forty percent at the top or forty-percent reduction at the bottom?

Dr. WYNDER. Forty-percent reduction over and above the standard regular sized cigarette.

Mr. PLAPINGER. What does that mean, actually, in terms of tar?

Dr. WYNDER. In terms of tars, it depends a little bit on the method that you use for tar determination. But let us say in the studies published by Snell, the tar content of the average regular sized cigarette is 30 milligrams, then it should be reduced to 18.

Mr. PLAPINGER. Suppose it is 40?

Dr. WYNDER. If it is 40, it means that this manufacturer has used specially heavy blends of tobacco, so we must arrive at the average norm that has been kept over the years.

Mr. PLAPINGER. But you would consider 18 the safety threshold. How much give one way or the other? Suppose it is 19?

Dr. WYNDER. It is very difficult to put an exact figure on this. We chose 40 in part because we noted a drop off at about this level in our dose-response studies. This is the line that we like to encourage.

I would never say that this cigarette would be safe, but I would say it will be safer.

Mr. HARDY. Suppose you do reduce it to 18. Then it is up to the individual smoker to regulate his volume of consumption. If he continues at a high rate of smoking, his total intake during a particular day or a particular period of time could exceed what it had been previously.

Dr. WYNDER. You made a very good point there. In the studies that we did on people who smoked filtered cigarettes, we questioned this particular point: Do you now smoke more or less since you shifted to filter cigarettes? There are a certain number of people who smoke more and a certain number of people who smoke less. There was no significant number of people who said they smoked much more.

Mr. HARDY. The encouraging thing in your testimony to me is apparently there is a solution to at least the critical serious effect of smoking.

Dr. WYNDER. That is right.

Mr. HARDY. On the other side of it, you present a rather sad picture to indicate that actually the intake of tars from smoking now is more than it was since before we started using filters.

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